

CLAIMS:

1. A display apparatus comprising
an electron gun comprising at least a first electrode (CA) and a second
electrode (G1),
a drive circuit (DR) for supplying a drive signal (VD) to the first electrode
5 (CA) and/or the second electrode (G1) to modulate an intensity of an electron beam (EB)
originating from the first electrode (CA),
a beam current measurement circuit (BMC) coupled to the first electrode (CA)
for measuring a measured beam current (IT) representing a beam current (IB) flowing in the
first electrode (CA), and
10 a compensation circuit (COM) for supplying a compensation current (ICO) to
the first electrode (CA) to compensate for a capacitive current (IC) through a capacitance
(CIN) between the first electrode (CA) and the second electrode (G1).
2. A display apparatus as claimed in claim 1, characterized in that the first
15 electrode is a cathode (CA), and in that the second electrode is a G1-grid (G1).
3. A display apparatus as claimed in claim 1, characterized in that the
compensation circuit (COM) comprises
an amplifier (AMP) for supplying an inverted drive signal (VDI) being the
20 drive signal (VD) inverted in amplitude at an amplifier output (IO) of the amplifier (AMP),
and
a compensation capacitor (CE) coupled between the amplifier output (IO) and
the first electrode (CA).
- 25 4. A display apparatus as claimed in claim 3, characterized in that the
compensation capacitor (CE) is electronically adjustable, and in that the display apparatus
further comprises a test signal generator (TSG) for generating a test signal (TS) during a test
period (TP), and a control circuit (CC) for controlling a value of the compensation capacitor

(CE) to obtain a minimal measured beam current (IT), measured during the test period (TP) in response to the test signal (TS).

5 5. A display apparatus as claimed in claim 3, characterized in that the amplifier (AMP) is adjustable, and in that the display apparatus further comprises a test signal generator (TSG) for generating a test signal (TS) during a test period (TP), and a control circuit (CC) for controlling the adjustable amplifier (AMP) to obtain a minimal measured beam current (IT), measured during the test period (TP) in response to the test signal (TS).

10 6. A display apparatus as claimed in claim 4 or 5, characterized in that the display apparatus further comprises a deflection circuit (DC) for deflecting the electron beam (EB) in frames of lines, wherein line flyback periods occur in-between the lines, and frame flyback periods occur in-between successive frames, the test period (TP) occurring during the frame and/or the line flyback periods.

15 7. A display apparatus as claimed in claim 1, characterized in that the display apparatus comprises

20 a plurality of electron guns for generating a plurality of electron beams (EB1, EB2, EB3, EB4), the plurality of electron guns being arranged to direct the plurality of electron beams (EB1, EB2, EB3, EB4) to substantially non-overlapping display areas (A1, A2, A3, A4),

25 the drive circuit (DR) being adapted for supplying a plurality of drive signals (VD1, VD2, VD3, VD4) to first electrodes (CA1, CA2, CA3, CA4) and/or second electrodes (G1A1, G1A2, G1A3, G1A4) of the plurality of electron guns so as to modulate an intensity of the plurality of electron beams (EB1, EB2, EB3, EB4),

the beam current measurement circuit (BMC) being adapted for measuring measured beam currents (IT1, IT2, IT3, IT4) flowing in the first electrodes (CA1, CA2, CA3, CA4) in response to the plurality of electron beams (EB1, EB2, EB3, EB4), and

30 the compensation circuit (COM) being adapted for supplying a plurality of compensation currents (ICO1, ICO2, ICO3, ICO4), each one of the plurality of compensation currents (ICO1, ICO2, ICO3, ICO4) being supplied to an associated one of the first electrodes (CA1, CA2, CA3, CA4) to compensate for the capacitive current (IC1, IC2, IC3, IC4) through the capacitance (CIN1, CIN2, CIN3, CIN4) between the associated one of the

first electrodes (CA1, CA2, CA3, CA4) and its associated second electrode (G1A1, G1A2, G1A3, G1A4).

8. A display apparatus as claimed in claim 1, characterized in that the drive
5 circuit (DR) comprises
a current to voltage converter (IU) for converting the measured beam current
(IT) into a measured voltage (VC), and
a subtractor (ADD) for subtracting the measured voltage (VC) from an input
signal (VI) to supply an error voltage (UE) to the drive circuit (DR) to obtain the drive signal
10 (VD).
9. A beam current measurement circuit as claimed in claim 1 or 7.
10. A method of measuring a beam current in a display apparatus comprising an
15 electron gun comprising at least a first electrode (CA) and a second electrode (G1), the
method comprising
supplying (DR) a drive signal (VD) to the first electrode (CA) and/or the
second electrode (G1) to modulate an intensity of an electron beam (EB) originating from the
first electrode (CA),
20 measuring (BMC) a measured beam current (IT) representing a beam current
(IB) flowing in the first electrode (CA), and
supplying (COM) a compensation current (ICO) to the first electrode (CA) to
compensate for a capacitive current (IC) through a capacitance (CIN) between the first
electrode (CA) and the second electrode (G1).